

of tarsal contact with a substrate. In general, loss of tarsal contact initiates wing flapping responses in insects (see Chapman, 1971). Neural reflexes which ordinarily would initiate flight must therefore be facultatively suppressed during the thanatonic condition.

It was unfortunately not possible to obtain additional specimens of *Caligo illioneus* to evaluate in detail various physiological and behavioral aspects of thanatosis. However, the present results are unlikely to be anomalous, as DeVries (*pers. comm.*) has observed thanatosis in three papilionid species (*Parides arcas*, *P. childrenae*, and *P. erithalion*), in a *Lycorea* sp. (Danainae), and in several ithomiine genera. Thanatosis may thus be a widespread anti-predatory defense in tropical butterflies.

Literature Cited

- BLEICH, O. E. 1928. Thanatose und Hypnose bei Coleopteren. Z. wiss. Biol. (A). 10: 1-61.
- BLEST, A. D. 1964. Protective display and sound production in some New World arctiid and ctenuchid moths. Zoologica 49: 161-162.
- CHAI, P. 1986. Field observations and feeding experiments on the responses of rufous-tailed jacamars (*Galbula ruficauda*) to free-flying butterflies in a tropical rainforest. Biol. J. Linn. Soc. 29: 161-189.
- CHAPMAN, R. F. 1971. The Insects: Structure and Function. New York, Elsevier. xii + 819 pp.
- EDMUNDS, M. 1972. Defensive behaviour in Ghanaian praying mantids. Zool. J. Linn. Soc. 51: 1-32.
- EEWER, R. F. 1966. Juvenile behavior in the African Ground Squirrel, *Xerus erythropus* (E. Geoff). Z. Tierpsychol. 23: 190-216.
- FRANCO, E. 1969. Behavioral aspects of feigned death in the opossum *Didelphis marsupialis*. Amer. Midl. Natur. 81: 556-567.
- GEHLBACH, F. R. 1970. Death-feigning and erratic behavior in leptotyphloid, colubrid, and elapid snakes. Herpetologica 26: 24-34.
- GREENE, H. W. 1988. Antipredator mechanisms in reptiles. In *Biology of the Reptilia*, Vol. 16. Alan Liss, New York. xi + 659 pp.
- RATNER, S. C. & R. W. THOMPSON 1960. Immobility reactions (fear) of domestic fowl as a function of age and prior experience. Anim. Behav. 8: 186-191.

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A New Specimen of *Vanessa braziliensis* "ab. dallasi" (Nymphalidae) from Argentina

Vanessa braziliensis (Moore) "ab. dallasi" was described and figured by Koehler (1945, p. 256; pl. 20, fig. 2). The "cotypes" (apparently at least two specimens) are stated to be from the Sierra de Ambato, Province of Catamarca, Argentina, at 2000 meters. In addition to the color plate, I have examined the "cotype" in the Breyer collection at the Museo de La Plata. The labels of the "cotypes" of this and *Vanessa carye* "ab. bruchi," described in the same paper,

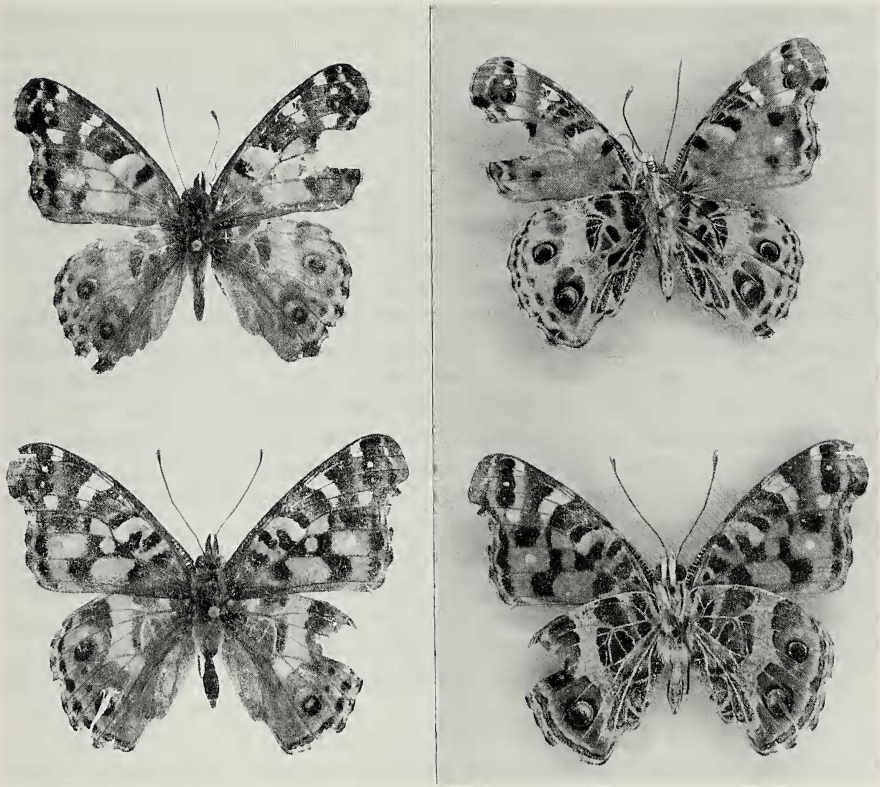


Fig. 1. *Vanessa braziliensis*: "ab. *dallasi*" (above) and normal (below), upper and lower surfaces, San Miguel de Tucumán, Argentina, 29.XI.1989.

appear to have become interchanged at some point, but both specimens bear the same label data, "Los Angeles (Capayán), 1800 m, I.1941." Los Angeles and Capayán are two towns a few km NW and S of San Fernando del Valle de Catamarca, the provincial capital, respectively.

It is evident that "ab. *dallasi*" is extremely similar to "ab. *ahwashtee*" Gunder of the closely-related *V. virginiensis* Drury, and "ab. *bruchi*" is nearly identical to one phenotype in the "*letcheri-muelleri*" series of aberrations in *V. annabella* Field. Just as these aberrations are not very rare in *V. annabella*, similar aberrant specimens of *V. carye* exist in most major Argentine collections and I have taken several myself. In *V. virginiensis*, specimens of "*ahwashtee*" are very rare (Shapiro 1983). Likewise, other than the "cotypes," no captures of *V. braziliensis* "*dallasi*" have been reported or located in Argentine collections.

A male nearly identical to the La Plata "cotype" was captured by me on 29 November 1989 in a vacant lot in San Miguel de Tucumán, Argentina in the company of numerous normal specimens (fig. 1).

Koehler was familiar with the European literature of temperature-induced aberrations, and confidently attributes all the cases of "melanism" described in his paper to "passing strong nocturnal cooling. . . . Some frost of near frost, acting on the young chrysalids has produced the specimens in question."

Koehler's explanation may be valid (Shapiro 1973, 1975), but it is extremely unlikely that several similar aberrations of two different species would be collected in the same locality on the same day. The possibility that the specimens were actually produced experimentally cannot be ruled out. Indeed, such practices ultimately gave the study of shock phenotypes a bad reputation in Europe.

The Tucumán specimen was collected in the subtropical lowlands, where no local cold shocks were likely. The weather records for Tucuman do not indicate any unusual temperatures in the previous two months. However, *V. braziliensis* is highly mobile and like *V. carye* in the same region appears to undergo regular seasonal altitudinal migration. At the time of this collection, individual immigrant *V. braziliensis* could be seen moving upslope and colonizing the Sierra de Aconquija and Cumbres Calchaques west of Tucumán, up to 4000 m. This movement coincides with the first seasonal rains of the "Bolivian winter," before which host plants are not available in the highlands. The seasonality thus argues strongly against this individual having bred in the cold mountains and descended to the lowlands, unless it had taken part in the downslope migration five or six months before.

This is the first aberration I have seen among many hundreds of *V. braziliensis* in 12 years of field work in Argentina. It is a very powerful testimony to the conservatism of this series of apparently homologous aberrations, which seem to occur throughout not only *Vanessa* but the closely allied genera as well.

I thank the Museo de La Plata for providing access to its collections. The photographs are by S.W. Woo.

Literature Cited

- KOEHLER, P. 1945. Melanismos naturales en Lepidópteros argentinos. Rev. Soc. Ent. Arg. 12: 253-256.
- SHAPIRO, A. M. 1973. Recurrent aberration in *Cynthia annabella*: a reivev with four new records (Lepidoptera-Nymphalidae). Pan-Pac. Entomol. 49: 289-293.
- 1975. Natural and laboratory occurrence of "clymi" phenotypes in *Cynthia cardui* (Nymphalidae). J. Res. Lepid. 13: 57-62.
- 1983. A new record of *Vanessa virginiensis* "ab. *ahwashtee*" from northern California (Nymphalidae). J. Res. Lepid. 20: 176-177.

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